

SPRUCE SWAMP PROTECTION PROJECT

A Final Report to
The New Hampshire Estuaries Project
Submitted by the

Rockingham County Conservation District
110 North Road
Brentwood, NH 03833

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Executive Summary and Introduction

The purpose of this project was to provide significant educational efforts promoting land and water resource protection for two communities that are in the project focus area. The project focus area was the Spruce Swamp, located within the Exeter River Watershed, in the two communities of Fremont and Brentwood. The land/water area included over 2500 acres. In addition, the Spruce Swamp Protection Project offered sustained assistance to residents within these two communities to help advance the implementation of significant land and resource protection projects within this focus area.

Although no permanent protection project was completed in the initial focus area of this project, significant education and outreach efforts have been achieved. The educational efforts on land protection, habitat protection, and the considerable natural resources found in this project focus area brought much enthusiasm into both communities, with Fremont being extremely active with their resultant actions. Moreover, the motivation for permanent protection efforts has been securely established in both communities, with a renewed sense of the importance of permanent stewardship of natural resources.

Project Goals and Objectives

The project involved two main phases including:

- 1) Public informational meetings to promote awareness of the significant natural resources located in and around Spruce Swamp, to discuss land protection, estate planning, and habitat protection methods, and included four public workshops held in Fremont; and
- 2) Offering technical assistance for landowners within the core area of the Spruce Swamp, conservation commissions, municipal officials, and all of the landowners adjacent to Spruce Swamp.

Methods

It is important to note that the success of this project involved the collaboration of a variety of natural resource groups and agencies, with the UNH Cooperative Extension involved with outreach efforts, and the Rockingham Planning Commission (RPC) involved with the GIS mapping efforts. Although the results of this project (i.e., a finalized conservation project) were not reached during this timeframe, significant advances for conservation have been achieved. However, for both communities, the accomplishments have been somewhat different. The most significant accomplishments for both communities are bulleted for informational purposes. It should be recognized that all parties involved in each of the documented tasks have expended a significant amount of time, effort, energy, and resources.

- Two workshops were held in October and November of 2002 with the following titles: *An Introduction to Spruce Swamp the largest single wetland complex in*

Rockingham County; Natural Resources and Wildlife Management; and Wetland and Water Resources of the Spruce Swamp, the largest single wetland complex in Rockingham County – these workshops had significant turnout and included several GIS maps providing natural resource information on the Spruce Swamp environment. Workshops included discussion of the overall natural resources found in this area, biodiversity, and both local and individual resource management options for this impressive regional resource. Additionally wetland values and functions, groundwater resource information, and options for protecting water resources were discussed. Handouts were provided, and GIS maps including water resource maps, a USGS topographical map, and an aerial map of Spruce Swamp and its surroundings were available for review. Both town newsletters promoted the workshops, and almost thirty letters were sent out to the abutters located within the core area of the Spruce Swamp, with additional information on conservation options and offering technical assistance.

- Two additional workshops were scheduled in March and May of 2003 with the following titles: *Wildlife Habitat and Wetlands Found in Spruce Swamp & Prime Wetlands Designation – what does it all mean;* and *Conservation Options and Estate Planning Workshop*. Only one of these workshops had a significant turnout and the second workshop was a quick question and answer session with the few individuals that showed. The first workshop listed included slides and discussion of findings of a wetland scientist within the Spruce Swamp complex, and the boundary mapping efforts for a possible prime wetlands designation, to be proposed at Town Meeting in March of 2003. Additional information was provided from the NH Department of Environmental Services (DES), Wetlands Bureau on what prime wetlands designation means and many questions were answered on the law and impacts to local landowners. Again, the flyers were included in both the Town of Fremont and Town of Brentwood local newsletters and the Rockingham County Conservation District (RCCD) sent over two-hundred and forty (240) letters to abutters located within the focus area to invite those residents to both workshops, provide information on conservation options, and to again offer assistance on conservation options to each landowner. Additionally, these workshops were promoted in two local papers!
- Throughout the entire project the RCCD met with representatives from the Town of Fremont, and many times with the Fremont Conservation Commission, while simultaneously informing the Brentwood Conservation Commission of the progress with the project. The RCCD also provided information to the Rockingham Land Trust, and through the positive response of the workshops was able to communicate with Phillips Exeter Academy (one of the largest landowners in the project focus area) to promote interest and support of conservation possibilities with both communities in this focus area.
- Several individuals contacted RCCD for additional information on conservation options for their land in both communities. After the initial contact, only three meetings took place where RCCD provided information on estate planning,

conservation options including providing copies of the booklet *Conservation Options A Landowner's Guide* produced by the Land Trust Alliance (2000), appraisers, and discussed conservation easements and how the communities of Fremont and/or Brentwood may be able to assist if a conservation option was chosen for their land. Even more disheartening is the fact that two of the three individuals that originally discussed and were interested in conservation options decided to move forward with extensive development plans, and the third individual approached the Fremont Planning Board with interest in partial and possibly mixed used development of significant land holdings.

- For landowners in Brentwood, the community had already completed a massive education and public relations campaign and successfully passed a \$2 million dollar open space bond authority in March of 2003. Therefore Brentwood had the ability to potentially provide funds to purchase development rights in this focus area and throughout the community. For the Town of Fremont, their conservation fund was not large enough to purchase development rights for many landowners with significant holdings in this same manner. RCCD met with members of the Fremont Conservation Commission to discuss other funding opportunities and the possibility of furthering their land protection efforts by sponsoring an open space bond article in 2004. Although the Fremont Conservation Commission was hesitant at first, through additional educational efforts they eventually warmed up to the idea of an open space bond.
- RCCD met with members of the Fremont Conservation Commission, Brentwood Open Space Task Force, and staff from the Society for the Protection of New Hampshire Forests (SPNHF) and UNH Cooperative Extension to discuss more directed and focused land protection strategies abutting Spruce Swamp. The intent of the meeting was to determine the interest of both communities in potentially partnering on land protection efforts. From this initial meeting RCCD worked with the Fremont Conservation Commission on educational efforts aimed to promote the idea of potentially sponsoring a local open space bond. To assist in recognizing the extent of the focus area, a tax map was assembled that included important lands surrounding Spruce Swamp within both Brentwood and Fremont and provided to all members attending the joint meeting.
- RCCD was in constant contact with UNH Cooperative Extension, SPNHF, and the Rockingham Planning Commission (RPC) to discuss focused land protection strategies and the necessity for the Town of Fremont to move forward with an open space bond request. This involved several personal contacts via email and phone as well as additional meetings.
- RCCD met with representatives from the Town of Fremont, UNH Cooperative Extension, staff from the SPNHF, and continued with additional meetings to discuss this matter further. Initially, the Fremont Conservation Commission felt unprepared and uneducated on moving forward with an open space bond authority. They were concerned of the short timeframe involved, lack of support, and of the upcoming

large school bond request. Further discussions convinced the Fremont Conservation Commission that it was timely to move forward now, particularly given what significant lands have changed hands to developers within the past year. Staff from the SPNHF met with the Fremont Board of Selectmen to obtain their support for initially attempting to protect the immediate uplands around Spruce Swamp and indicated that a \$2 million dollar bond authority would be needed to assist/promote land protection within this focus area.

- The Fremont Conservation Commission spent time researching the tax changes and development changes that have occurred in Fremont over the past ten years, and were able to document the significant pressures that continue to occur in this community. After research had been completed, the Fremont Conservation Commission became convinced that this was a positive direction in which to proceed.
- RCCD continued to work with the Fremont Conservation Commission and provided significant information on what other communities have completed for open space initiatives, and what they had passed for open space bond articles within the past few years. The Fremont Conservation Commission initiated a gathering meeting for all interested residents aimed to form an Open Space Committee to work on all aspects of land protection and promote an open space bond authority. Once this meeting was held, RCCD assisted the newly formed Open Space Committee by providing additional technical assistance on the following: warrant article language; suggesting due to limited timeframe (December, 2003) that the Open Space Committee focus their efforts on the public relations and education that will be necessary to pass an open space bond; and by providing significant (although draft) public relations information for the town newsletter and suggestions for flyers to be sent to all residents prior to Town Meeting. There is a very interested population segment involved in this open space proposal and a variety of individuals attending these meetings, from young to old, new residents that have moved into town, to those who have lived there all their lives, which makes this project even more endearing. The newly developed Fremont Open Space Committee unanimously approved moving forward with a \$4 million dollar bond authority for all of Fremont rather than focusing only on the Spruce Swamp environs. RCCD organized a workshop so that this new committee could learn from two nearby communities with recent successful open space bond article passage utilizing very different avenues. This meeting was a tremendous success with over thirty Fremont Open Space Committee members and interested residents learning and asking very pointed questions. This informational setting led to the approval of the \$4 million dollar bond authority to be proposed as a citizen's petition from the Conservation Commission. RCCD provided examples of warrant articles and citizen's petitions as well as information on the tax implications for the Town of Fremont, with varying bond requests and varying timeframes. This will assist the Fremont Open Space Committee (an advisory group to the Conservation Commission) in pulling together an informative presentation that will be needed for upcoming public hearings and future public meetings.

- The Citizen's Petition was prepared, and within four days over 120 signatures were received supporting this request, indicating there is already strong support for open space protection in this community. RCCD continued to provide technical assistance on a variety of questions that have arisen as the Fremont Open Space Committee moved forward organizing a public relations campaign effort to support land protection within the Town.
- Although RCCD will not be able to see this open space bond request through to fruition (i.e., March 2004) the other natural resource agencies and groups that have been involved will likely pick up where RCCD has left off. Moreover, this newly formed Open Space Committee is committed, energetic and now has additional resources to contact (i.e., other communities) that will assist them as they progress in this significant open space protection undertaking.

Results and Discussion

The two main objectives at the onset of the *Spruce Swamp Protection Project* have been achieved. The four workshops that were offered were well attended (except for one) with valuable information provided, and excellent questions asked by the participants. The outcome from these workshops led the Town of Fremont to have tremendous support for the passage of a prime wetlands designation warrant article for specific areas in and around Spruce Swamp. Additionally many residents were interested and became more aware of the wildlife habitat, and of the importance of the natural resources to the Spruce Swamp environs, as well as the entire watershed. Increasing the awareness of habitat management and conservation options among both municipal officials and community members was an outstanding success in Fremont.

Throughout this project, the Town of Brentwood had already initiated a significant education and public relations campaign on the economics of open space, and was able to successfully pass a \$2 million dollar bond open space authority in March of 2003. Moreover, throughout this project the Town of Fremont had not been able to financially assist landowners interested in permanently protecting their critical properties. There simply were not nearly enough funds available in the conservation fund to offer willing landowners with significant landholdings equitable incentives. Unfortunately, two of the landowners that initiated discussions on conservation options during this project, and had appraisals completed, ended up entering into purchase and sales agreements with local/regional developers. The third landowner was talking to the Fremont Planning Board on innovative/different ways to develop his landholdings with the possibility of preserving a much smaller portion of his landholdings.

During the greater part of this project the Town of Fremont was reluctant to push the envelope and attempt passage of an open space bond in order to financially assist landowners to permanently protect critical properties. This was a very new avenue for the Town of Fremont to undertake and although they had much success with the education and passage of a prime wetlands designation article for Spruce Swamp, the Conservation

Commission did not feel that they had the time, energy, resources, or knowledge of conservation options and values to move this effort forward.

Luckily, near the completion of this project a couple of other organizations/agencies (UNH Cooperative Extension and the SPNHF) that were interested in seeing protection efforts occur in this area (Spruce Swamp) as it contains significant open contiguous lands, assisted with additional discussions on the possibility of the passage of an open space bond with the Fremont Conservation Commission. Through several discussions with both the Conservation Commission and the Board of Selectmen, and with additional research on development impacts over the past decade in Fremont, the Fremont Conservation Commission had a significant change of heart. Knowing that they would not have to be totally responsible for all efforts involved in an open space bond campaign also removed some of the pressures they were feeling to be able to complete an open space bond campaign in a timely manner.

In order to assist the overworked Conservation Commission, an advisory group to the Conservation Commission, the Fremont Open Space Committee, was recently developed. This newly formed enthusiastic group has been hard at work becoming educated on conservation options, and learning what other communities have completed when undertaking a public relations open space bond campaign. Not long ago, the Open Space Committee with support from the Conservation Commission unanimously approved moving forward with a \$4 million dollar open space bond authority for all of Fremont, rather than focusing only on the Spruce Swamp environs.

This component of the *Spruce Swamp Protection Project* would never have occurred if the significant educational and outreach efforts during the past year had not been completed. The Fremont Conservation Commission now feels empowered to continue on a large-scale conservation effort throughout the community, with assistance from those agencies and groups that have been working with them throughout this project, and with assistance and support from the newly formed Open Space Committee. The overall project has allowed the Town of Fremont to advocate for critical resource protection issues and techniques, and has clearly strengthened the local capacity of the Fremont Conservation Commission. The Brentwood Conservation Commission and Open Space Task Force has also been involved with the more recent discussions on protecting the Spruce Swamp and are interested in actively participating in these large scale protection efforts. The Town of Brentwood has already been successful in the passage of an open space bond authority, and has already assisted many landowners in town with permanent protection efforts, particularly with funding support to help leverage their existing dollars.

Due to the education and outreach efforts from the *Spruce Swamp Protection Project*, this large scale conservation effort will be continued in a more positive and informed manner during 2004/2005 than we could have ever hoped for. This accomplishment is the direct consequence of the education, outreach, and initial technical assistance provided under the *Spruce Swamp Protection Project*.

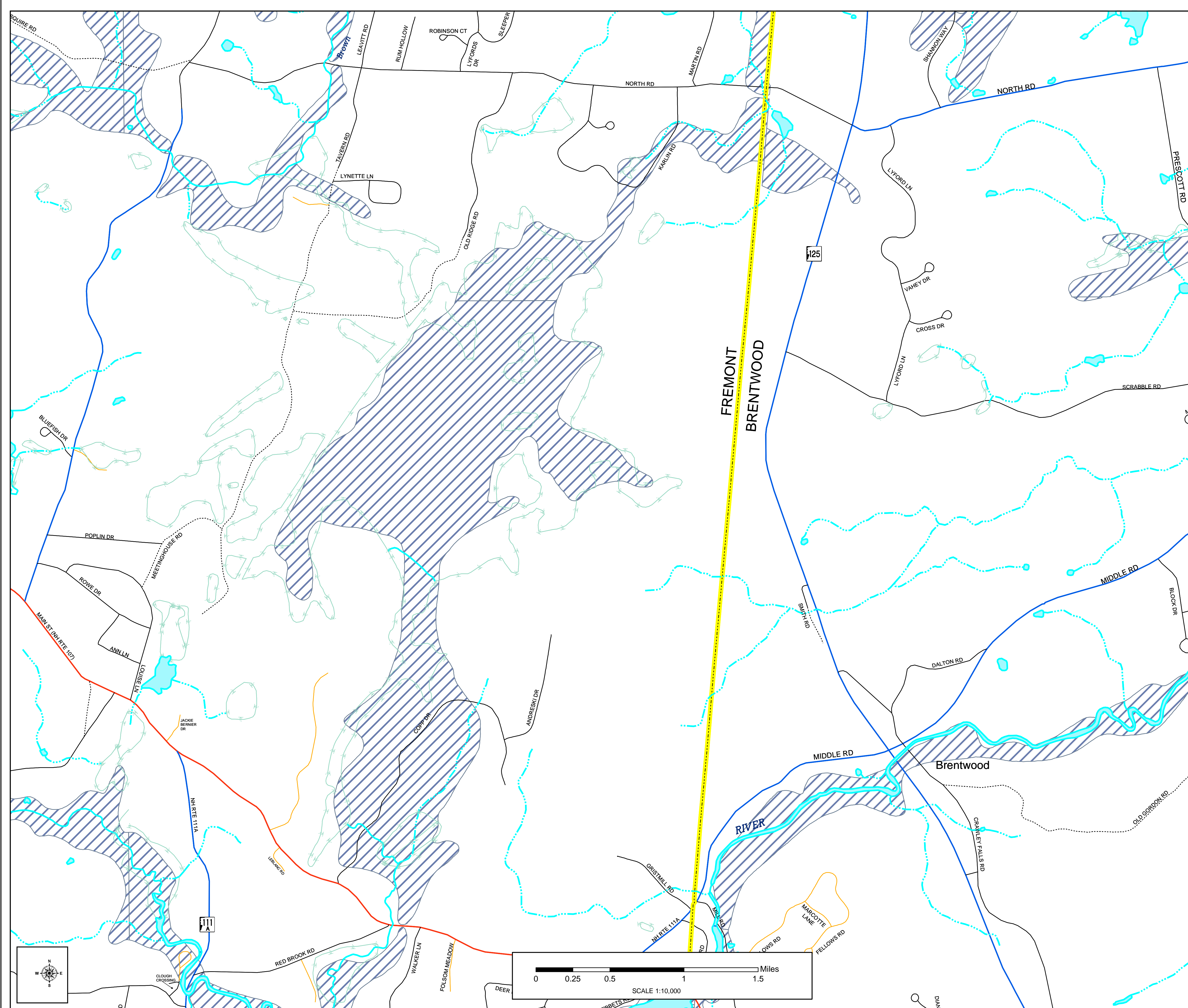
The Town of Fremont has significantly expanded their conservation capacity through the *Spruce Swamp Protection Project*. Moreover, the Town of Fremont has advanced by seeking to obtain significant funds for permanently protecting critical land and water resources within the community, hopefully to be approved by Town Meeting (March 2004). Most of all, the Conservation Commission is now ready, willing, and able to initiate and hopefully implement its first significant conservation project. All of these positive efforts are the direct result of the *Spruce Swamp Protection Project*. It is very likely that this effort will be a catalyst for significant protection efforts in this community, and perhaps in adjacent communities within the NH Coastal Watershed.

Conclusions

The *Spruce Swamp Protection Project* has ended successfully. For the conservation commissions that have been involved with this project, the members from the Towns of Fremont and Brentwood have strengthened their capacity to educate residents on critical natural resources and to initiate and work toward implementing conservation projects. Obviously, the results achieved from a completed conservation project within the focus area would have highlighted the ultimate success of the *Spruce Swamp Protection Project*. However, the effectiveness for each of these groups to become educated themselves, and to advocate and protect natural resources within their respective communities has increased dramatically through the duration of this project. That in itself is a significant accomplishment for the health of the entire NH Coastal Watershed. Moreover, due to the increases in requests for technical assistance for these types of services from communities throughout Rockingham County, RCCD can confirm that the type of technical assistance offered in the Town of Fremont has significantly expanded their conservation capacity through the *Spruce Swamp Protection Project* is desired, and therefore considered an accomplishment of this project.

Recommendations

RCCD has an impressive history with natural resource initiatives in the County. As of the completion of this project, several other communities have come to RCCD in need of similar technical assistance. The need and desire for technical assistance for natural resource protection projects is genuine in Rockingham County, as well as throughout the entire NH Coastal Watershed. Many of the communities do not have funds available to request this technical assistance, and this is where the assistance of the NHEP is imperative. Once this type of technical assistance is provided, some communities can then find additional funds more readily available, as the results of this assistance often lead to significant educational opportunities for all involved. The significant outreach and educational efforts that resulted from this project achieved wonderful natural resource minded consequences and significant conservation enthusiasm within Fremont. Moreover, any conservation projects that are initiated and/or implemented because of this technical assistance often become the tangible natural resource projects that can emphasize the importance of this work and of the stewardship of natural resources. This result not only benefits the community members involved, but also benefits all that live and recreate in the NH Coastal Watershed.



Flood Hazard Areas
Spruce Swamp
Fremont-Brentwood, New Hampshire
Aquifers, Watersheds and Wetlands

August 16, 2001

LEGEND

ZONE



Areas of Special Flood Hazard
An area inundated by 0.2% annual chance flooding; an area inundated by 1% annual chance flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or an area protected by levees from 1% annual chance flooding.



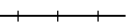
Flood Hazard Areas Not Mapped
Area Not Included

BASE FEATURES

RPC Regional Roads

- Limited Access Highway
- Ramp
- State Highway
- Public Road, municipally maintained
- Public Road, not maintained
- Private Road
- Trail

Railroads



Political Boundaries

- State Boundary
- Town Boundary
- County Boundary

Surface Water Features

- shoreline
- stream
- intermittent stream
- marsh or swamp outline
- other water feature
- Bodies of Water

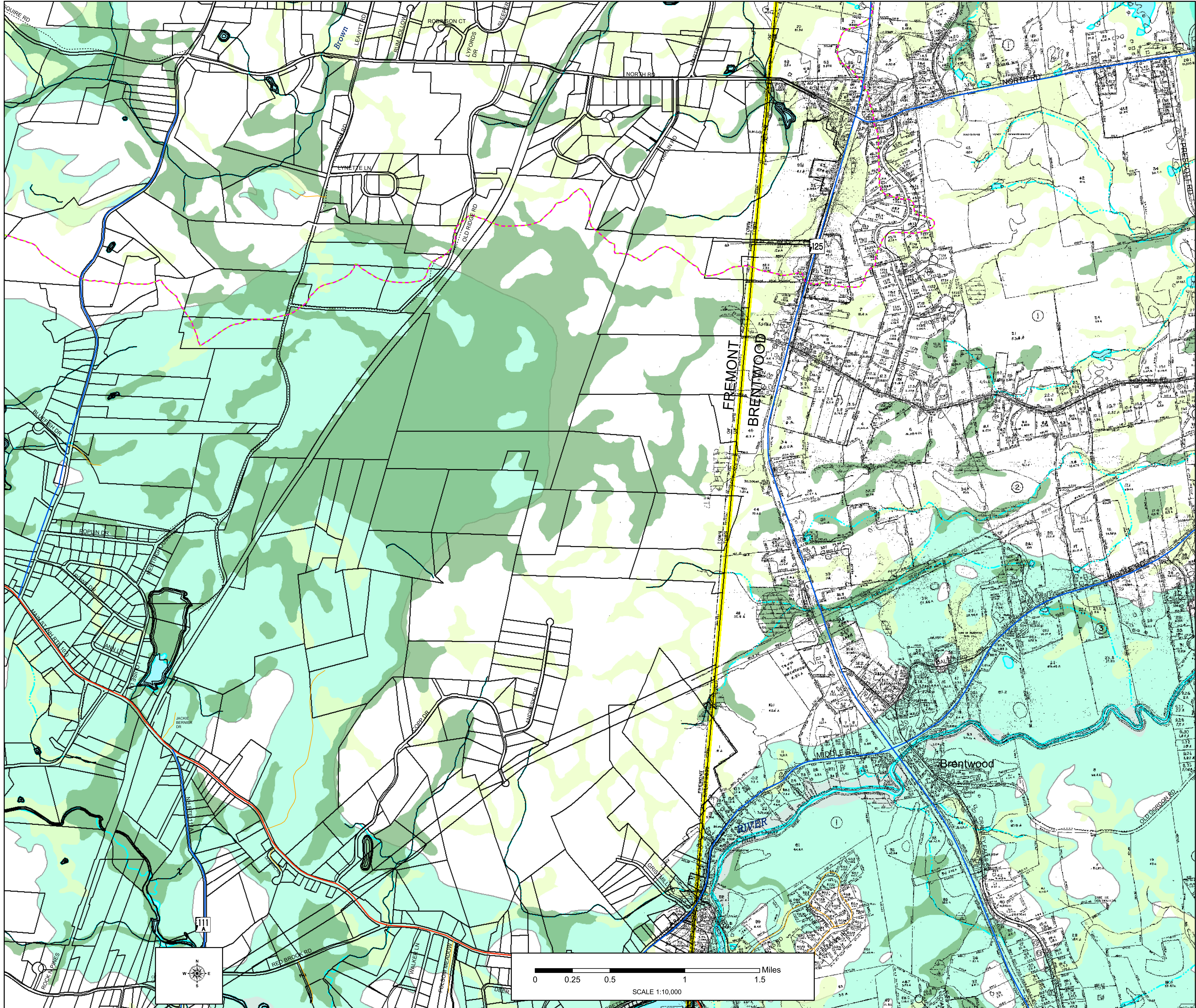
Areas outside of Rockingham Planning Region

MAP DATA SOURCES

Flood Hazard Areas
Special Flood Hazard Area (SFHA) are defined by the Federal Emergency Management Agency as a part of the product called the Q3 Flood Data. The Q3 Flood Data are developed by electronically scanning the current effective map panels of existing paper FIRMs. Certain key features are digitally captured and then converted into area features (floodplain boundaries, flood insurance zones, political boundaries). Using computer mapping software, you can overlay the Q3 Flood Data with your own information (land parcels, transportation networks, customer addresses, etc.) to display zones of potential flood risk and identify future marketing opportunities.

Base Features
Base features (transportation, political and hydrographic) were automated from the USGS Digital Line Graph data, 1:24,000, as archived in the GRANIT database at Complex Systems Research Center, Institute for the study of Earth, Oceans and Space, University of New Hampshire, Durham, NH; 1992-1999. The roads within the Rockingham Planning Region have been updated by Rockingham Planning Commission and by NH Department of Transportation through ongoing efforts.

NOTE: Base features for areas surrounding the Rockingham Region may be shown on this map. These features were automated from USGS 1:100,000 scale digital data sources. This information was provided for reference only. RPC makes no claim to its completeness or accuracy.



**Aquifers
Spruce Swamp
Fremont-Brentwood, New Hampshire
Aquifers, Watersheds and Wetlands**

August 16, 2001

LEGEND

- Very Poorly Drained Soils
- Poorly Drained Soils
- Hydric B - Non Hydric Complex or Association
- Watershed Boundaries

Transmissivity of Stratified Drift Aquifers by Feet Squared Per Day

- Stratified-Drift Aquifers in the Exeter, Lamprey, and Oyster River Basins**
- Less than 500
 - 500 to 1000
 - 1000 to 2000
 - 2000 to 3000
 - Greater than 3000

BASE FEATURES

- | | | |
|--|--|---|
| RPC Regional Roads <ul style="list-style-type: none">Limited Access HighwayRampState HighwayPublic Road, municipally maintainedPublic Road, not maintainedPrivate RoadTrail | Railroads <ul style="list-style-type: none"> | Surface Water Features <ul style="list-style-type: none">shorelinestreamintermittent streammarsh or swamp outlineBodies of Water |
| | Political Boundaries <ul style="list-style-type: none">State BoundaryTown BoundaryCounty Boundary | |
| Areas outside of Rockingham Planning Region | | |

MAP DATA SOURCES

Transmissivity of Stratified Drift Aquifers
Transmissivity quantifies the ability of an aquifer to transmit water, measured in feet squared per day. Transmissivity/Aquifer data was automated by Complex Systems Research Center, UNH and is archived in the GRANIT Database. The aquifer data was automated from maps generated as part of a larger study of groundwater resources in New Hampshire. The Study was conducted under a cooperative agreement between the US Geological Survey and the NH Department of Environmental Services, Water Resources Division. It included an assessment of the aquifers within stratified sand and gravel deposits.

The specific reports that cover the Rockingham Planning Region are the following:
US Geological Survey Open-File Report 92-95, "Geohydrologic and Ground-Water-Quality Data for Stratified-Drift Aquifers in the Exeter, Lamprey, and Oyster River Basins, Southeastern New Hampshire." This study was prepared in cooperation with the NH Department of Environmental Services, Water Resources Division and was completed in 1992.

US Geological Survey Water-Resources Investigations Report 91-4025, "Geohydrology and Water Quality of Stratified-Drift Aquifers in the Lower Merrimack and Coastal River Basins, Southeastern New Hampshire." This study was prepared in cooperation with the NH Department of Environmental Services, Water Resources Division and was completed in 1992.

Tax lot boundaries for the town of Fremont were obtained from Dollard Associates Inc. The data was delivered in CAD (dwg) format in November 2002. Parcel boundaries and road names were extracted from the CAD files for display purposes. This data was licensed by Dollard Associates Inc.

Dollard Associates
73 Dollard Road
Auburn, NH 03032-3135
(603) 483-8323

Brentwood Tax Parcels on this map are displayed from a scanned image of a tax map composite. The composite image was received from the Brentwood Conservation Commission in July 2002. The composite was produced by cutting, manually aligning, and taping together four hardcopy tax sheets. The product was then scanned and delivered to RPC in a TIF file format. RPC rectified the image for display with other GIS data layers. This image should be used for planning purposes only and RPC makes no claim to its accuracy or correctness.

Base Features
Base features (transportation, political and hydrographic) were automated from the USGS Digital Line Graph data, 1:24,000, as archived in the GRANIT database at Complex Systems Research Center, Institute for the study of Earth, Oceans and Space, University of New Hampshire, Durham, NH; 1992-1999. The roads within the Rockingham Planning Region have been updated by Rockingham Planning Commission and by NH Department of Transportation through ongoing efforts.